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From: Advanced Sonar Division

To: Commander
Naval Research Laboratory/Stennis Space Center
Stennis Space Center, MS 39529-5004

Attn: Dr. Michael Richardson, Code 7431

Subj: Quarterly Performance Report on "Bottom Scattering Strength Measurement and Analysis," under Grant No. N00014-95-1-G906, for the period 1 April 1995 through 30 June 1995

Ref: (a) Office of Naval Research Grant No. N00014-95-1-G906, "Bottom Scattering Strength Measurement and Analysis"

Encl: (1) Quarterly performance report
(2) Material Inspection and Receiving Report (DD Form 250) ASG0285

1. Enclosure (1) is submitted in compliance with Ref. (a) as the quarterly performance report.

2. Enclosure (2) is forwarded as required by DFARS, Appendix F, Distribution for the Material Inspection and Receiving Report. Please sign and return one copy to the address shown above, marked for the attention of the Contracts Office. A signed DD Form 250 is necessary for ARL:UT to maintain complete documentation files on the delivery of contractually required items.

N. P. Chotiros

Nicholas P. Chotiros

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Collection of high frequency reverberation data from shallow water sediment, particularly coral and mud sediments for measurement on spatial backscatter statistics, using sensors mounted on a tripod on the bottom and on a ROV, in support of high frequency sonar imaging applications and sediment classification.

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Quarterly Performance Report
Grant No. N00014-95-1-G906
1 April 1995 - 30 June 1995

Principal Investigator: Nicholas P. Chotiros
Sponsor: Dr. Michael D. Richardson, NRL/SSC
Coastal Benthic Boundary Layer Special Research Program
Title: Bottom scattering strength measurement and analysis

Objective:

Collection of high frequency reverberation data from shallow water sediments, particularly coral and mud sediments for measurement of spatial backscatter statistics, using sensors mounted on a tripod on the bottom and on a remotely operated vehicle (ROV), in support of high frequency sonar imaging applications and sediment classification.

Progress

The sonar used on the Key West sea test was taken to the Lake Travis Test Station for a complete calibration check, using the exact same configuration as was used on the ROV in the sea test. The ROV operations were very successful, particularly the combination of acoustic data acquisition with visual inspection of the sediment which provided improved correlation between acoustic and measurements and bottom type. The calibration check included projector and receiver sensitivities and compensation for the effects of time-varying-gain (TVG) and automatic-gain-control (AGC) circuits. The calibrations were used to process the recorded acoustic data. The processing software was written in Labview for compatibility with the data acquisition system. In addition, preparations were made for the workshop on gassy sediments in Eckernförde, Germany, on the subject of acoustic bottom penetration based on data recorded by Steve Stanic on previous CBBL seatests.

Enclosure (1) to ARL:UT
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